

PARLIAMENT OF INDIA  
(JOINT RECRUITMENT CELL)

MAIN EXAMINATION FOR POSTS OF EXECUTIVE/LEGISLATIVE/COMMITTEE/PROTOCOL OFFICER AND  
RESEARCH/REFERENCE OFFICER IN LOK SABHA SECRETARIAT

3<sup>rd</sup> SEPTEMBER, 2010

AGRICULTURE - Paper-I

INSTRUCTIONS : Answers must be written in English only. Candidates should attempt at least 2 questions from each section and total 5 questions. All questions carry equal marks.

Time: 3 hours

Marks: 300

SECTION – A

1. What do you understand by the term “Integrated farming system”? Suggest suitable farming systems for marginal and sub-marginal farmers under Dry land conditions. Also suggest suitable techniques for improving water and nutrient use efficiency in crop production in Dry land areas.
2. What would be the major challenges in Indian agriculture in next two decades? Suggest suitable technologies to address these challenges with emphasis on food and nutritional security of the country. Also describe briefly the status and scope of commercialization of agriculture in India.
3. Write briefly on the following:
  - (a) Scope and limitations of cultivation of pulses and oilseeds
  - (b) Soil and climatic needs of coriander and napier grass
  - (c) Seed rate of tobacco, mustard, ginger, sugarcane, jute, oats, cumin, castor, papaya and turmeric
4. Describe briefly the soil related constraints in India. How the availability of plant nutrients is affected in acidic and sodic soils. Discuss the management options for enhancing productivity in flood prone areas.
5. Describe the concept and principles of watershed management. Discuss briefly the components of watershed management programme. Also suggest suitable alternative land use systems for watershed areas.

SECTION – B

6. Describe briefly any four of the following:
  - (a) Role of agricultural extension in dissemination of technologies and their impact assessment
  - (b) Synergy between nutrient and water in crop production
  - (c) Major agro-forestry products and their economic importance
  - (d) Role of farm mechanization in agricultural production
  - (e) Conjunctive water use in rice wheat cropping system
  - (f) Present status of agriculture marketing infra-structure in India and the policies needed for further improvement in marketing of agricultural produce
7. What are the principles and components of farm management? Describe various farm management practices for optimum resource utilization both at small and big farms.
8. Define integrated and site specific weed management. Describe the factors affecting persistence of herbicides in soil. Explain briefly about the isoproturon resistance in *Phalaris minor* and alternative options for its effective chemical control in wheat crop.
9. What are various approaches for scheduling irrigation? Describe briefly about the most appropriate approach for scheduling irrigation in field crops with merits and demerits. Describe the management strategies to enhance water productivity under various kinds of droughts with limited water supply.
10. Write short notes on any four of the following:
  - (a) System of rice intensification
  - (b) Partial and complete budgeting
  - (c) Global warming and agriculture
  - (d) Economic evaluation of farming systems
  - (e) Contingency crop planning
  - (f) Role of cooperatives in agricultural economy

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AGRICULTURE – Paper II

INSTRUCTIONS : Answers must be written in English only. Candidates should attempt at least 2 questions from each section and total 5 questions. All questions carry equal marks.

Time: 3 hours

Marks: 300

SECTION – A

1. Answer the following in about 200 words each:
  - (a) Mendel's classical work
  - (b) Breeding methodology for self pollinated crops
  - (c) Male sterility in plants
2. Write short notes in 200 words each:
  - (a) Theories of organic evolution
  - (b) Role of DNA and RNA
  - (c) Mutation breeding
3. Differentiate any three of the following in about 200 words each:
  - (a) Respiration and photorespiration
  - (b) Evaporation and transpiration
  - (c) C<sub>3</sub> and C<sub>4</sub> plants
  - (d) Growth promoters and inhibitors
4. Explain significance of the following in relation to productivity of plants:
  - (a) Photosynthetic pigments
  - (b) Photo-thermo sensitivity
  - (c) Growth hormones
5. Enumerate importance of the following:
  - (a) Hybrid vigour
  - (b) Transgenic crops
  - (c) Seed dormancy

SECTION-B

6. Describe the following:
  - (a) Integrated pest management
  - (b) Major diseases of solanacea crops (Tomato and Potato)
  - (c) Climatic requirements of pomegranate, banana and coconut
7. Write short notes on:
  - (a) Ideal lay out plan of mango and guava orchards
  - (b) Organic farming
  - (c) Importance of trace elements
8. Enumerate the following:
  - (a) Fertilizer production in India and import scenario
  - (b) Soil reclamation and drainage
  - (c) Macro and micro nutrient requirement of crops
9. Write importance of the following:
  - (a) Seed industry in India
  - (b) Floriculture a boon for Indian farmers
  - (c) Major pests of pulse crops in India
10. Answer any three of the following in about 200 words each:
  - (a) Climate change and its impact on crop productivity
  - (b) How to enhance food processing industry in India and why?
  - (c) Suggestions regarding improving public distribution and procurement systems in India
  - (d) Fixation of market support price and farmers agony in India